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CLAIMS

1. A hard sintered body indexable insert in which a hard sintered body that contains cubic boron nitride by 20 vol % or more is brazed to a seating groove formed at a corner of a tool substrate, and a ridge of the hard sintered body is used as a cutting edge, the hard sintered body indexable insert characterized in that at least a pair of hard sintered bodies or composite hard sintered bodies are disposed on upper and lower surfaces in a thickness direction of the hard sintered body indexable insert; a thickness of a part of the tool substrate between the pair of seating grooves is within a range of 30% to 90% with respect to a thickness of the hard sintered body indexable insert; a length of a cutting edge of the hard sintered body or of the composite hard sintered body is within a range of 0.5 mm to 4.0 mm; and a bonding layer that has been brazed contains 0.5 to 65 wt % Ti and/or Zr and further contains Cu.

2. The hard sintered body indexable insert as recited in Claim 1, wherein the hard sintered body or the composite hard sintered body is 0.8 mm to 1.6 mm in thickness per piece.

3. The hard sintered body indexable insert as recited in Claim 1 or Claim 2, wherein the hard sintered body is bonded directly to the tool substrate through the bonding layer.

4. The hard sintered body indexable insert as recited in any one of Claim 1

through Claim 3, wherein the bonding layer contains 20 wt % to 30 wt % Ti and 20 wt % to 30 wt % Zr, and the remainder of Cu and inevitable impurities.

5. The hard sintered body indexable insert as recited in any one of Claim 1 through Claim 3, wherein the bonding layer contains 0.5 wt % to 20 wt % Ti and/or Zr and contains 10 wt % to 40 wt % Cu and the remainder of Ag and inevitable impurities.

6. The hard sintered body indexable insert as recited in any one of Claim 1 through Claim 3, wherein the bonding layer contains 0.5 wt % to 10 wt % Ti and/or Zr, and contains 5 wt % to 20 wt % In and 15 wt % to 35 wt % Cu, and the remainder of Ag and inevitable impurities.

7. The hard sintered body indexable insert as recited in any one of Claim 1 through Claim 6, wherein on a surface of the hard sintered body indexable insert, there is formed a coating layer comprising at least one element selected from the group consisting of elements belonging to groups IVa, Va, VIa in the periodic table and elements Al, Si, and B, or at least one compound selected from the group consisting of nitride, carbide, or of oxide at least one metal selected from this group, and their solid solutions.

8. A manufacturing method for manufacturing a hard sintered body indexable insert in which a hard sintered body that contains cubic boron nitride by 20

vol % or more is brazed to a seating groove formed at a corner of a tool substrate, and a ridge of the hard sintered body is used as a cutting edge, the manufacturing method comprising:

a step of preparing a paste-like brazing alloy by mixing a powdery brazing alloy that contains 0.5 to 65 wt % Ti and/or Zr and that further contains Cu with an organic binder;

a step of bonding the hard sintered body or the composite hard sintered body to a seating groove of the upper surface of the tool substrate through the paste-like brazing alloy and thereafter temporarily fastening the hard sintered body or the composite hard sintered body by evaporating a solvent component of the organic binder;

a step of bonding the hard sintered body or the composite hard sintered body to a seating groove of the lower surface of the tool substrate through the paste-like brazing alloy and thereafter temporarily fastening the hard sintered body or the composite hard sintered body by evaporating the organic binder; and

a step of brazing and fixing the hard sintered body indexable insert in which the hard sintered body or the composite hard sintered body is bonded to tool substrate in a vacuum or in an inert gas atmosphere.

9. The manufacturing method as recited in Claim 8, wherein the brazing alloy contains 20 wt % to 30 wt % Ti and 20 wt % to 30 wt % Zr, and the remainder of Cu and inevitable impurities.

10. The manufacturing method as recited in Claim 8, wherein the brazing alloy contains 0.5 wt % to 20 wt % Ti and/or Zr , 10 wt % to 40 wt % Cu, and the remainder of Ag and inevitable impurities.

11. The manufacturing method as recited in Claim 8, wherein the brazing alloy contains 0.5 wt % to 10 wt % Ti and/or Zr, 5 wt % to 20 wt % In, 15 wt % to 35 wt % Cu, and the remainder of Ag and inevitable impurities.

12. The manufacturing method as recited in any one of Claim 8 through Claim 11, further comprising a step of forming, on a surface of the hard sintered body indexable insert, a coating layer comprising at least one element selected from the group consisting of elements belonging to groups IVa, Va, VIa in the periodic table and elements Al, Si, and B, or at least one compound selected from the group of nitride, carbide, or oxide of at least one metal selected from this group, and their solid solutions, according to a physical vapor deposition method or according to a chemical vapor deposition method.

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